

REMARKS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the foregoing amendments and the following remarks. The Applicants originally submitted Claims 1-43 in the application. In an Office Action mailed on February 12, 2003 the Examiner objected to claims 3-43 under 37 C.F.R. 1.126, for being misnumbered. The Examiner renumbered these claims to Claims 4-45. In response to the Official Action of February 12, 2003, the Applicants elected to prosecute the invention of a device Group III, namely Claims 28-45, and withdraw Claims 1-27. In response to the present Examiner's Action, the Applicants have amended Claims 28, 29 and 31 and canceled Claims 30 and 43-45 and added Claim 46. The amendment to Claim 28 and new claim 46 are fully supported by the Specification. *See e.g.*, paragraphs [0004], [0022], [0033] and [0035]. Accordingly, Claims 28-29, 31-42 and 46 are currently pending in the application.

I. Rejection of Claims 29 and 31 under 35 U.S.C. §112 second paragraph

The Examiner has rejected Claims 29-31 and 43-45 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

In response, the Applicants have amended Claim 29 so as to clarify that these claims are directed to the polishing pad. Claim 30 has been canceled without prejudice or disclaimer. Claim 31 has been amended to Claim 29, and the phrase "or more" has been removed. Claims 43-45 are canceled without prejudice or disclaimer. Therefore the Applicants respectfully request that the Examiner remove the §112 second paragraph rejection of Claims 29 and 31.

II. Rejection of Claims 28-29, 31, 33-37 and 40-42 under 35 U.S.C. §102

The Examiner has rejected Claims 28-29, 31, 33-37 and 40-42 under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 6,076,662 to Bahten ("Bahten"). The Applicants respectfully disagree.

Claim 28 recites, among other things, that the polishing pad is configured for use in chemical mechanical polishing of a semiconductor wafer in conjunction with a polishing slurry having an abrasive. In contrast, Bahten's cleaning brush is used after CMP is completed (Column I, Lines 54-58; Column 11, Lines 5-37). Moreover, Bahten makes clear that the cleaning brush is not to be used in conjunction with CMP slurries because slurries contaminate and renders the brush ineffective for further cleaning (Column 11, Lines 24-34). Rather, brush is used in conjunction with deionized water or cleaning chemistries to remove CMP slurry and other residue (Column 11, Lines 24-34). The Applicants respectfully submit that the inclusion of an abrasive or other slurry components in Bahten's deionized water or cleaning chemistries would be contrary to Bahten's goal of removing CMP slurry and other residues, and would hasten the ineffectiveness of the brush for cleaning.

In addition, the Applicant's declaration filed with the present response under 37 C.F.R. §1.132 ("Obeng Declaration"), explains that the kinds of sponge materials disclosed by Bahten are inappropriate for use as a CMP polishing pad.

Therefore, Bahten does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. Because Claims 29-31, 33-37 and 40-42 are dependent upon Claim 28, Bahten also cannot be an anticipating reference for these Claims. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to Claims 28-29, 31, 33-37 and 40-42.

III. Rejection of Claims 28-29 and 31-42 under 35 U.S.C. §103

The Examiner has rejected Claims 28-29, 31-37 and 40-42 under 35 U.S.C. §103(a) as being unpatentable over Bahten in view of U.S. Patent No. 6,454,634 to James *et al.* ("James"). The Examiner further rejected Claims 28, 29, 31 and 33-42 under 35 U.S.C. §103(a) as being unpatentable over Bahten. Claims 38-39 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bahten and the Examiner's Official Notice that conventional polishing slurries include abrasives and ethanolamine.

The Applicants respectfully maintain that the claimed invention is not obvious in view of the foregoing combined references, and that various combinations of these reference fail to establish a *prima facie* case of obviousness of Claims 28-29 and 31-42

As noted above, Bahten is not directed to CMP of semiconductor wafers, but rather to the cleaning of wafers after CMP is completed. Furthermore, as indicated in the Obeng Declaration, Bahten's brush materials are inappropriate for use as polishing pads for use in CMP. As discussed above, Bahten's brushes are incompatible with CMP slurries because slurries contaminate and renders the brush ineffective, and because abrasive are contrary to Bahten's goal of cleaning already polished semiconductor wafers. Therefore, Bahten fails to teach or suggest a polishing pad soaked in an aqueous medium and located within the sealable moisture tight package, wherein the polishing pad is configured for use in chemical mechanical polishing of a semiconductor wafer in conjunction with a polishing slurry having an abrasive, as recited in Claim 28.

Additionally, the asserted combination of Bahten with James fails to establish a *prima facie* case of obviousness because the combination of these two references is improper.

The Applicants respectfully submit that one skilled in the art would not be motivated to incorporate the method of packaging taught by Bahten with James's polyurethane polishing pads.

Bahten is directed to packaging a scrubbing brush composed of a sponge or porous polymeric material, such as polyvinyl alcohol, with a preservative to prevent bacterial growth in the sponge (Abstract; Column 3, Lines 57-64). As indicated in the Obeng Declaration, materials such as polyvinyl alcohol are susceptible to bacterial growth because their high degree hydrophilicity attracts atmospheric water. This is in contrast to materials used as polishing pads in CMP which are more hydrophobic and therefore do not attract sufficient water to support microorganism growth. As further indicated in the Obeng Declaration, polishing pads are conventionally stored and transported dry, and therefore microorganism growth is not an issue. Thus, in the absence of hindsight from the present invention, one of ordinary skill in the art would have no motive to place James's polyurethane polishing pads into Bahten's preservative-containing package.

Because Bahten fails to teach or suggest all of the elements of the inventions of Claim 28 and the combination of Bahten and James is improper, the Examiner cannot establish a *prima facie* case of obviousness of dependent Claims 29-42 which include the elements of the independent claim. The Applicants therefore respectfully traverse the Examiner's rejections of Claims 28-29 and 31-42 under 35 U.S.C. §103(a) and request the Examiner to withdraw the rejection.

IV. Prior Art Made of Record

The Applicants believe that the prior art made of record and not relied upon by the Examiner is not particularly pertinent to the claimed invention, but the Applicants retains the right to address these references in detail, if necessary, in the future.

V. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a timely Notice of Allowance for Claims 28-29, 31-42 and 46.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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